

REPORT  
OF THE  
CITY OF GLASGOW  
FEVER AND SMALLPOX  
HOSPITALS, BELVIDERE,

FOR THE

*Year ending 31st May, 1904,*

WITH NOTES ON THE COMPLICATIONS OF ENTERIC FEVER, SCARLET FEVER, AND DIPHTHERIA, BIRTHPLACES OF PATIENTS SUFFERING FROM SCARLET FEVER AND MEASLES, AND ON THE EFFECT OF SCHOOLS IN SPREADING SCARLET FEVER.

BY

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ALSO,

NOTE ON THE LEUCOCYTOSIS OF TYPHUS FEVER, BY DR. A. LOVE,

AND

REPORT ON THE CITY OF GLASGOW SMALLPOX HOSPITAL, BY  
DR. R. S. THOMSON, VISITING PHYSICIAN.

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*Submitted to the Committee on Health, 12th December, 1904,  
and ordered to be printed.*

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GLASGOW :

PRINTED BY ROBERT ANDERSON, 142 WEST NILE STREET.

1905.

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TO THE CHAIRMAN AND MEMBERS  
OF THE HEALTH COMMITTEE.

GENTLEMEN,

I have the honour to submit the Report of the City of Glasgow Fever and Smallpox Hospitals, Belvidere, for the year ending 31st May, 1904. On that day there were 302 patients in hospital. During the year 3,257 patients were admitted; and of these 296 died. This gives a mortality over all of 9·1 per cent., which is only three-fourths that of the preceding year. This is explained by the fact that practically all the fevers treated in the hospital have been of a milder type than in the preceding year. Thus the mortality from Enteric Fever has been 15·7 per cent., as against 21·6 per cent.; of Diphtheria, 14·2 per cent., as against 18·5 per cent.; Scarlet Fever, 4·5 per cent., as against 6·3 per cent.; Whooping-cough, 14·3 per cent., as against 22·8 per cent.; and Smallpox, 7 per cent., as against 9 per cent. in the last outbreak, which occurred in 1901-2. The only exception among the principal diseases which are admitted to hospital is in the case of Measles, where the mortality was 7·3 per cent., as against 6·3 per cent. in the preceding year. The average number of patients in the hospital has been 342, as against 301 in the preceding year, and the average period of residence in hospital 36·6\* days, as against 50·7 days last year. In the history of the hospital during the year there has been nothing very notable. Among the staff the number attacked by infectious diseases has been, however, somewhat large, although fortunately no death occurred. (Table XIV.) An epidemic of sore throat which broke out among the staff and patients of the hospital was found to be associated with an eruption affecting the udders of the cows at the dairy farm which supplies the hospital. I do no more than mention this here, however, as Dr. Chalmers has already fully reported on the matter.

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\* This short period is due to the large number of cases of Measles and Smallpox admitted during the year.

The Dorcas Society during the year has supplied 4,780 articles of clothing to patients who were found to be insufficiently clad for dismissal. Nearly a third of those admitted required such assistance.

The usual lectures to nurses were delivered during the year in three courses, one for each year of probation. Seventeen senior probationers were examined for the Hospital Certificate, and this was granted to fifteen. The general level of the papers was high.

There were only three courses of lectures to students, the spring course being prevented by the epidemic of Smallpox.

I have the honour to be,

GENTLEMEN,

Your obedient Servant,

JOHN BROWNLEE.

## NOTE ON THE COMPLICATIONS OF ENTERIC FEVER, SCARLET FEVER, AND DIPHTHERIA.

During the last few years I have published in the Annual Reports a series of tables giving the numbers and ages of patients suffering from the chief complications of the different diseases. This I purpose discontinuing to print annually, and propose from time to time to give a synopsis for a series of years of such points relating to the type and complications of the diseases as may appear to be of special interest. This, I think, will be more useful to those who desire to obtain rapidly an idea of the appearances which the diseases present in the hospital, and will not obscure any important statistical fact.

In this report, then, I shall consider briefly the complications of Enteric Fever, Scarlet Fever, and Diphtheria for the last three years.

With regard to the first, the number of cases admitted during the three years has been 897. The type during the first two of these years was of very considerable severity, the mortality being 20 per cent., while in the last the type was much milder, and the mortality 15 per cent. Enteric Fever has several complications which are very typical of the disease. Some of these are capable of being very accurately defined, and consequently lend themselves to statistical treatment: these include relapse, perforation, intestinal hæmorrhage, and thrombosis of the veins. Others, however, do not lend themselves so well to numerical definition. This class includes, in the first place, tympanitis, some degree of which is present in a majority of cases of Enteric Fever. So many grades of it exist that it is almost impossible to say where it begins and where it ends, and thus any statistics which could be compiled must be so dependant on the observer's personal equation as to be practically of little value. I have, therefore, classed all such cases among the uncomplicated. A like procedure has been followed with regard to hypostatic pneumonia; no case of Enteric Fever which ends in death but has some degree of this condition,



and it is so largely a symptom of failing circulation in all pyretic diseases as to be hardly worth raising to the dignity of a special complication of any fever. When pneumonia and bronchitis are tabulated, then, as complications in the tables of this hospital, it is to be understood that either true lobar or lobular pneumonia is present, or that the bronchitis is generalised and not merely a term applied when a few moist râles are heard on auscultation. The adjoining tables give a summary of the principal complications noted in the cases of Enteric Fever treated in the hospital during the last three years.

One characteristic of Enteric Fever is found in the fact that as the age increases the mortality very steadily increases as well. This is a characteristic of most infectious diseases which largely affect adults. In addition, the percentage of uncomplicated cases steadily grows less, so that while for 0-10 years 80 per cent. of the patients received into the hospital suffer from no complications, from 40 upwards this percentage has fallen to 55. The most frequent complication of Enteric Fever is relapse. This apparently varies very considerably in amount in different epidemics. During the hospital year 1901-2, 6·5 per cent. of the patients suffered from relapse, during the year 1902-3 the amount was 5·9 per cent., while during the last hospital year it amounted to 14 per cent., though during these three years there has been no change in the method of treating the disease. The death-rate among the cases which suffer from relapse has been, as is commonly noted, surprisingly lower than that of the total cases, amounting to 2·5 per cent., as against a general mortality for the three years of 19 per cent. The age of greatest frequency is 10 to 25 years of age, the frequency both at higher and lower ages being considerably less. It is more common among females than among males, occurring in 7·5 per cent. in the latter as against 10·6 per cent. in the former. It is to be noted that the proportion of cases of relapse is highest in the year in which the general mortality is lowest, and a corresponding relationship is observable between the frequency with which



relapse occurs among females and males and the general death-rates of the two sexes from this disease.

The next most frequent complication of Enteric Fever is intestinal hamorrhage. This has been present during the last three years in 5·6 per cent. of the total cases. It is associated with a very high death-rate. Under 30 years of age it is exceptionally fatal, having a mortality of 70 per cent., while after this age it falls to about 45 per cent. Its age of greatest frequency is 25 to 30 years. It occurs much more commonly in males than females, affecting 6·5 per cent. of the former as against 4·4 per cent. of the latter. In the first of the three years under review it occurred in 8 per cent. of the total admissions and the last two only 5 per cent. Associated with hamorrhage in its etiology is perforation of the bowel, which the former frequently precedes. During the last three years this has occurred in 1·8 per cent. of the admissions; the bulk of the cases have been between 5 and 30 years of age, and all have been fatal. During the last year only three cases occurred; these all happened in the earlier part of the hospital year, and for the last nine months no cases have occurred.

True lobar or lobular pneumonia, as distinct from hypospatic pneumonia, has not been very frequent, and occurred in only about 2 per cent. of the cases. Generalised bronchitis has been somewhat more common, and is more frequently seen in males than females.

Twelve cases of thrombosis of the veins of the leg have been noted, five of which occurred in males and seven in females.

*Scarlet Fever.*—Scarlet fever has probably more complications definitely and constantly associated with it than any other infectious disease. Of these, cervical adenitis is the most frequent. It has occurred in the last three years in 7·8 per cent. of the total cases, while otitis media follows closely with a frequency of 6·8 per cent. Nephritis has been met with in 5·2 per cent. and rheumatism in 3·1 per cent. of the total admissions. Of these patients suffering from adenitis, as may be seen from the table, 23 per cent. suffer

also from other complications, of which the chief are nephritis, otitis media, and scarlatinal rheumatism. It is not specially a complication of childhood, but diminishes in frequency from six years upwards, and it is considerably more common in females than males.

Otitis media is of greatest frequency between the years of three and four, though its relative frequency from birth to that age is moderately constant, amounting to about 15 per cent., after this it gradually becomes less frequent, and during the last three years no case occurred after the age of 20 years. It is somewhat more common among females than males. Of those with otitis media, nearly 30 per cent. suffer from other complications. Much the most specially related, however, to the actual condition is that of mastoid abscess, which followed in about 6 per cent. of the total cases. It is especially a complication of childhood: of the ten cases, eight occurred between the years of two and six. It has been much more common among females than males: of the ten cases, eight occurred in the former as against two in the latter.

Nephritis is probably the most characteristic complication of Scarlet Fever. The term is not applied to the temporary albuminuria which is so common in Scarlet Fever, and unless blood occurs in the urine, or some of the uræmic symptoms are also present, or unless the albumen has been copious and persistent, the case is not included in this table. Nephritis, as regards mortality, varies greatly as the cases develop outside or in the hospital. Out of the eleven deaths in the last three years, eight occurred in persons admitted suffering from this complication, who, having had mild attacks of Scarlet Fever which passed unnoticed, were allowed to walk about, and, exposing themselves to cold, developed an attack of an acuteness which is very uncommon among persons attacked by this inflammation when lying in bed and protected against chill. From two years and upwards it has occurred roughly in about 6 per cent. of the total cases, the lowest period being seven to fifteen years, when the percentage falls to four, the numbers, however, are

not large enough to make this certain. It occurs about equally in males and females. Out of the 119 cases, 18 suffered from some other complication, as may be seen in the annexed table.

The last definite complication of Scarlet Fever which occurs with any abundance is scarlatinal rheumatism or arthritis. It is associated largely with the septic complications of Scarlet Fever—adenitis, otitis, empyema, pyelitis, protracted sore throat, &c. The number of persons in whom one or other of these complications is present is equivalent to 50 per cent. of the total cases in which scarlatinal arthritis is present, and it is increasingly more prevalent from two years upwards, occurring in about 1 per cent. of the cases between two and five years, and in 8 per cent. from twenty to forty years.

The percentage of uncomplicated cases shows a like increase. It has been nearly half as common again among females as among males.

*Diphtheria*.—Of the complications in Diphtheria, albuminuria is one of the most common. As it is present, however, in about 90 per cent. of the cases, there is little use tabulating its presence unless distinction were made regarding the amount, date of appearance, and persistence.

Enlargement of the cervical glands is also so regular a feature of the disease that its presence is a symptom rather than a complication. The chief true complications are broncho-pneumonia and paralysis. The former is particularly fatal, especially during the first three years of life, when the mortality among cases suffering from it is 65 per cent. During the first three years of life it is about equally common among males and females: it occurs in 15 per cent. of the patients admitted at these ages, but it has only been present in 2 per cent. of the patients of three years and upwards. With regard to paralysis, it is a comparatively rare complication, having occurred in only 24 cases out of 459 admissions, amounting to about 5 per cent. in all. It has been much more common among females than males, the proportions being 8 per cent. of the total female cases as

against 2·3 per cent. for the latter. It has been comparatively uncommon under four years. Between four and ten years 17, or 8 per cent., at these ages were affected. Out of thirty-one persons over 20 years of age one case occurred. It is to be noted that, in the 24 cases occurring during the last three years, four came under treatment on the fourth day of illness, four on the fifth, seven on the sixth, four on the seventh, and one each on the eighth, ninth, eleventh, thirteenth, and fourteenth days of illness. No person who received serum within the first three days was affected with paralysis.



TABLE OF THE COMPLICATIONS IN ENTERIC FEVER FOR THREE YEARS, 1901-1904.

AGE-PERIODS.	Total Cases.				Uncomplicated.				Relapse.				Hæmorrhage.				Perforation.				Pneumonia.				Bronchitis.				Thrombosis.			
	Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
0—5	26	1	19	...	22	...	18	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5—10	83	8	73	6	67	3	54	2	4	...	10	...	1	...	...	...	2	2	2	2	1	...	4	1	4	2	...	...	...	...	1	...
10—15	63	8	74	5	47	2	60	5	9	2	7	...	1	1	1	...	...	...	...	...	...	1	...	3	3	1	...	...	...	...	...	...
15—20	76	16	46	11	57	9	32	7	6	...	6	...	2	1	3	2	4	4	2	2	2	1	...	...	3	1	1	...	...	...	...	...
20—25	87	24	50	14	64	17	31	8	9	...	6	...	5	5	1	1	...	...	1	1	3	1	1	...	2	1	2	1	...	...	2	...
25—30	78	24	58	12	53	10	40	7	3	...	6	...	12	10	4	1	1	1	1	1	...	...	2	2	2	2	1	1	2	...	1	...
30—40	64	16	46	9	44	10	27	4	6	...	3	...	5	3	4	1	2	2	1	1	1	...	2	...	1	...	2	...	2	1	2	...
40—50	30	11	11	1	18	6	6	1	1	...	2	...	7	4	2	...	...	...	...	...	1	1	...	...	1	...	...	...	1	...	1	...
50—60	4	3	7	1	...	...	5	...	...	...	1	...	...	...	2	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
	511	111	384	59	372	57	273	34	39	2	41	...	33	24	17	6	9	9	7	7	8	3	10	3	17	10	7	2	5	1	7	...

TABLE OF THE COMPLICATIONS IN SCARLET FEVER FOR THREE YEARS, 1901-1904.

AGE-PERIODS, - - - - -	0-1.				1-2.				2-3.				3-4.				4-5.				5-6.				6-7.				7-8.				8-10.				10-15.				15-20.				20-30.				30-40.				40 and upwards.			
CASES AND COMPLICATIONS.	Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.									
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.										
Total Cases, - - - - -	19	3	10	3	40	7	33	5	80	4	69	12	98	9	132	6	116	10	123	3	106	3	140	7	109	2	134	5	100	2	118	4	119	2	144	7	137	3	183	5	63	2	64	1	50	1	61	5	18	...	18	1	5	...	5	1
Uncomplicated, - - - - -	14	2	4	2	25	5	20	3	51	3	44	1	65	6	82	4	79	6	89	1	71	1	104	3	80	1	94	3	81	...	97	4	99	2	109	5	121	3	150	3	54	2	51	1	50	...	55	3	16	...	15	...	5	...	5	1
Nephritis, - - - - -	...	...	...	...	1	1	...	...	4	...	3	...	5	1	7	1	10	1	3	...	7	1	6	1	5	1	7	1	4	1	3	...	6	...	4	...	4	...	7	...	4	...	2	...	1	...	6	1	1	...	1	...	...	...	...	...
Otitis Media, - - - - -	...	...	4	...	2	...	6	...	7	...	5	1	13	1	13	...	8	...	8	1	4	...	8	...	6	...	8	...	4	...	2	...	...	...	5	1	2	...	4	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	
Otitis, with Mastoiditis, - - - - -	1	...	...	...	...	...	...	...	1	...	...	...	...	...	3	...	...	...	2	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Adenitis, - - - - -	2	...	2	...	4	...	...	...	7	...	6	2	3	...	12	...	6	...	13	1	10	...	8	1	8	...	11	1	3	...	6	...	4	...	11	...	5	...	9	...	2	...	3	...	3	...	2	...	...	...	...	...	...	...	...	
Adenitis and Otorrhoea, - - - - -	...	...	...	...	2	...	...	...	6	...	1	...	3	...	3	...	3	...	1	...	3	...	1	...	1	...	2	...	1	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Rheumatism, - - - - -	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...	2	...	5	1	4	...	4	...	6	...	4	...	5	...	5	...	9	1	3	...	4	...	1	...	5	...	4	...	6	...	1	...	1	...	...	...	...	...



TABLE OF THE CASES OF OTITIS MEDIA OCCURRING AS A COMPLICATION IN SCARLATINA, WITH THE ASSOCIATED COMPLICATIONS.

Age-Periods.	Otitis Alone.		Otitis and Mastoiditis.		Otitis and Adenitis.		Otitis and Rheumatism.		Total Otitis.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
0—1	4	...	1	...	...	...	...	...	5	...
1—2	8	...	...	...	2	...	...	...	10	...
2—3	12	1	1	...	7	...	1	...	21	1
3—4	26	1	3	...	6	...	1	...	36	1
4—5	16	1	2	...	4	...	2	...	24	1
5—6	12	...	2	...	4	...	1	...	19	...
6—7	14	...	...	...	3	...	1	...	18	...
7—8	6	...	1	...	1	1	1	1	9	2
8—10	5	1	...	...	1	...	...	...	6	1
10—15	6	...	...	...	1	...	...	...	7	...
15—20	2	...	...	...	...	...	...	...	2	...
	111	4	10	...	29	1	7	1	157	6



TABLE OF THE CASES OF NEPHRITIS OCCURRING AS A COMPLICATION OF SCARLET FEVER, WITH THE ASSOCIATED COMPLICATIONS.

Age-Periods.	Nephritis.		Nephritis and Adenitis.		Nephritis and Otorrhoea.		Nephritis, Adenitis, and Otorrhoea.		Nephritis and Broncho-Pneumonia.		Nephritis and Onychia.		Nephritis and Empyema.		Nephritis and Rheumatism.		Nephritis, Pneumonia, and Otorrhoea.		Total Nephritis.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
0-1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1-2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
2-3	7	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...
3-4	12	2	...	...	...	...	1	...	1	...	1	...	1	...	...	...	...	...	16	3
4-5	13	1	1	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	17	1
5-6	13	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	15	2
6-7	12	2	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	14	2
7-8	7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	1
8-10	10	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...
10-15	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...
15-20	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...
20-30	7	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	9	1
30-40	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	101	10	5	...	5	...	1	...	2	...	1	...	2	1	...	...	1	...	119	11

TABLE OF THE CASES OF SCARLATINAL ARTHRITIS OR RHEUMATISM OCCURRING AS A COMPLICATION IN SCARLET FEVER, WITH THE ASSOCIATED COMPLICATIONS.

Age Periods.	Total.		Rheumatism.		Rheumatism, with other Complications.		ASSOCIATED COMPLICATIONS.
	C.	D.	C.	D.	C.	D.	
0—1	...	...	...	...	...	...	
1—2	...	...	...	...	...	...	
2—3	1	...	...	...	1	...	Adenitis.
3—4	3	...	1	...	2	...	Adenitis, Whooping-cough.
4—5	2	...	...	...	2	...	Otorrhœa in both.
5—6	9	1	5	...	4	1	One with Icterus (died), two with Adenitis, one admitted with Nephritis.
6—7	10	...	8	...	2	...	One with Otorrhœa; one admitted with Nephritis.
7—8	9	...	7	...	2	...	One with Otorrhœa; one admitted with Nephritis.
8—10	14	1	9	...	5	1	One with Protracted Sore Throat; one with Endocarditis; one with Otorrhœa and Syncope (died); one with Adenitis; one with Otorrhœa.
10—15	7	...	5	...	2	...	One admitted with Nephritis; one with Pylitis and Adenitis.
15—20	6	...	4	...	2	...	One with Adenitis and one with Pleurisy.
20—30	10	...	8	...	2	...	One with Adenitis and one with Abscesses.
30—40	2	...	1	...	1	...	Adenitis and Erysipelas.
	73	2	48	...	25	2	

TABLE OF COMPLICATIONS IN DIPHTHERIA FOR THREE YEARS (1901-1904).

Age Periods.	Total Cases.				Faucial Cases.				Laryngeal Cases.				Tracheotomies.				Broncho-Pneumonia.				Paralysis.			
	Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.		Males.		Females.	
	C.		C.		C.		C.		C.		C.		C.		C.		C.		C.		C.		C.	
	D.		D.		D.		D.		D.		D.		D.		D.		D.		D.		D.		D.	
0-1	18	8	9	6	1	2	1	1	12	7	7	5	6	2	2	3	3	4	3	...	...	...	...	...
1-2	35	5	28	13	9	2	7	3	26	3	21	10	3	13	9	3	2	4	3	...	...	...	...	...
2-3	48	8	30	10	18	1	11	3	29	7	19	7	15	5	9	6	3	5	4	...	...	...	...	...
3-4	27	4	32	6	13	2	12	2	14	2	20	4	6	2	14	3	1	...	...	...	...	...	...	...
4-5	34	2	29	4	12	1	18	2	12	1	12	2	7	...	3	2	...	1	...	...	...	...	...	...
5-10	48	3	71	9	32	1	51	6	16	1	20	3	5	1	14	3	...	2	1	3	...	...	...	...
10-15	8	...	10	2	8	...	10	2	...	...	2	...	...	1	...	...	...	1	1	1	...	...	...	...
15-20	3	...	6	1	3	...	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20-30	6	...	17	...	6	...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30 and upwards	4	...	4	...	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	231	30	236	51	111	8	138	20	109	21	101	31	56	17	56	22	15	9	17	12	5	...	19	1

## NOTE ON THE BIRTHPLACE OF PATIENTS SUFFERING FROM MEASLES AND SCARLET FEVER.

It has often been noted, especially with regard to Measles, that, at the higher ages, a large proportion of the cases admitted to the hospital are of country extraction, but, so far as I know, no definite statistics have so far been published regarding this matter. A table is therefore given in this report, in which the birthplaces of 1,245 cases of Measles and of 2,360 cases of Scarlet Fever are tabulated for the different age-periods. The method of classification adopted is to place in the first column all those persons who were born in Glasgow; then in the second those who were born in other towns, such as London, Sheffield, Paisley, &c., in which towns both Measles and Scarlet Fever are generally endemic, and in which, therefore, the children have probably as large a chance of acquiring these diseases as if their youth had been spent in Glasgow. On the whole, it is probable that the collective chance is somewhat less, as this group includes a border land of smaller towns, ranging in size between the large towns above mentioned and those which are little more than villages, and in which Scarlet Fever and Measles may be practically absent for considerable periods. In the third group are placed all who are born in country villages or in the actual country. A very large percentage of the persons classed in this group come from districts of the West Highlands of Scotland, and from parts of Ireland, in which Measles and Scarlet Fever are not endemic and are rarely present in an epidemic form.

With regard to the cases of Measles, it will at once be noted that almost no persons born in Glasgow and over ten years of age are admitted suffering from this disease. Out of ten cases only seven are between the ages of ten and fifteen years, two are between fifteen and twenty years, and one between twenty and twenty-five years. It would appear that of the native-born population of Glasgow almost all persons who reach the age of twenty years either belong

to the class of those who are insusceptible by constitution, or have acquired immunity by passing through an attack of the disease. Of those who come from other towns the proportion of cases at high ages is somewhat larger, bearing out the remark that in some measure these persons come from districts in which Measles are less prevalent than in Glasgow. In very striking contrast to this is the age-distribution among those persons who are immigrants from the country. Among these more than twice as many cases of Measles occur after the age of ten years than before it, and out of 102 cases altogether among such persons 42 occurred between the ages of twenty to twenty-five years. The incidence of Scarlet Fever presents some contrast to this. There is no fall in the numbers of cases at the ages of ten to fifteen years. The decline from year to year is steady, and were it not that it might be presumed that the same influence would also make itself felt in this disease as well as in Measles, the figures themselves might not suggest the necessity of investigation. When, however, the birthplaces are taken out and classified in the same manner as has been done for Measles, country extraction is seen to be a potent factor in increasing the number of cases at higher ages. When the cases due to immigration are subtracted from the total, it is easily seen that the growth of natural immunity with age in Scarlet Fever is much more marked than the statistics of the total cases suggest. Up to ten years of age, cases of country extraction are only 4 per cent. of the native born, from ten to fifteen years they amount to 13 per cent., from fifteen to twenty years 36 per cent., from twenty to twenty-five years 80 per cent., and above that age 126 per cent. The period at which the greatest number of country-born persons develop Scarlatina is the same as that for Measles, *i.e.*, twenty to twenty-five years, though the proportion of the total is not nearly so large as in the other instance. These tables throw a little light on the nature of immigration to a great city. Under ten years of age, where the immigrants are children, these must very largely be passive immigrants, *i.e.*, children brought to Glasgow by

their parents on account of work, business, &c. The majority, therefore, consist of persons born in other industrial towns, though the excess of these over those coming from the country districts is not so large as might be expected. When the two tables are combined we find that there are 163 children born in other towns, as against 110 born in the country. After fifteen years, immigration is largely that of young persons in search of employment, and the fact that the largest number of cases occur between twenty and twenty-five years is but the expression that the age of twenty roughly marks the period of life at which immigration is most common. At this period the relationship noted above, between age and the locality from which immigration takes place is reversed, 49 persons only being admitted of town extraction as against 193 from the country. This excess, however, probably over-estimates the relative proportion of immigration from the country, as immigrants from other towns must be much more largely protected against Scarlet Fever and Measles by the much larger chance which they have had of acquiring immunity by an attack of the disease.

## MEASLES CASES—PLACE OF BIRTH.

Age-Periods.	Glasgow.	Other Towns.	Country.	Totals.
0—1	49	3	1	53
1—2	173	5	1	179
2—3	162	4	5	171
3—4	169	6	1	176
4—5	156	12	4	172
5—6	132	3	2	137
6—7	120	6	7	133
7—8	72	6	4	82
8—10	45	3	6	54
Totals,	1,078	48	31	1,157
10—15	7	2	4	13
15—20	2	2	13	17
20—25	1	2	42	45
25—30	...	...	8	8
30—40	...	1	3	4
40—45	...	...	1	1
Totals,	3	5	67	75



## SCARLET FEVER CASES—PLACE OF BIRTH.

Age-Periods.	Glasgow.	Other Towns.	Country.	Totals.
0—1	27	1	...	28
1—2	75	1	4	80
2—3	173	11	4	188
3—4	245	10	4	259
4—5	255	10	11	276
5—6	255	16	13	284
6—7	258	17	16	291
7—8	214	22	16	252
8—10	288	17	19	324
0—10	1,790	105	87	1,982
10—15	327	36	42	405
15—20	105	15	37	157
20—25	52	15	32	99
25—30	28	9	27	64
30—35	11	5	10	26
35—40	2	4	9	15
40—45	3	1	2	6
45—50	2	...	2	4
50—55	...	...	...	...
55—60	1	...	1	2
	204	49	120	373

# NOTE ON THE ABSENCE OF EVIDENCE OF THE SPREAD OF SCARLET FEVER BY SCHOOLS IN GLASGOW.

In my Annual Report two years ago I made a short note on the age-incidence of Scarlet Fever in the different seasons of the year, referring specially to the alteration on such incidence as might be produced by the holiday period. I there showed that the figures gave no indication that Scarlet Fever was spread to any extent in Glasgow by schools. This year, in pursuance of this subject, I have tabulated the day of sickening of 907 cases at school ages.

So far as I know this has only been done before by \*Dr. Whitelegge, whose figures are appended to this Table, but in his figures apparently adults are included as well as children, while the latter are not confined merely to those attending school. In my Table it will be seen that there is no particular deviation from the mean, no more, in fact, than would be found to occur by the laws of probability at least once in every twice that an equal number of cases is investigated. The divergence, however, shown by Dr. Whitelegge's figures is more considerable, and the difference from the mean such as could only be expected to occur with random selection once in every six times that a like number of cases was investigated.

In Glasgow there are practically two days in the week, Saturday and Sunday, in which direct contact of children with one another is greatly minimised. Though Sunday schools exist the duration of the lessons is only one hour, and a large proportion of the children do not attend them. If, then, Scarlet Fever were spread largely by schools, there should be at some period of the week a distinct fall in the number of cases sickening corresponding to the relative absence of infection occurring on Saturdays and Sundays. Such a period is seen in Dr. Whitelegge's figures, and is of sufficient significance to make the subject worthy of further inquiry in different places, as he suggests. It is to be noted,

\* Transactions of the Epidemiological Society of London, 1887-88, p. 153.

## SCARLET FEVER.

NUMBER OF CASES AT SCHOOL AGES SICKENING ON EACH DAY OF THE WEEK. GLASGOW, 1901-04, TO WHICH IS GIVEN FOR COMPARISON A LIKE TABLE FOR NOTTINGHAM, WHERE, HOWEVER, THE CASES ARE CLASSIFIED BY THE DATE OF APPEARANCE OF THE RASH.

GLASGOW.					NOTTINGHAM (Dr. WHITELEGGE).						
	1901-2.	1902-3.	1903-4.	Total.	Difference from Mean.		First Cases, 1887.	First Cases, 1886-7-8.	Secondary Cases, 1886-7-8.	Total.	Difference from Mean.
Sunday, -	38	44	42	124	- 5.6	Sunday, -	00	11	49	165	+ 4
Monday, -	54	54	35	143	+ 13.4	Monday, -	61	126	53	179	+ 18
Tuesday, -	42	37	38	117	- 12.6	Tuesday, -	61	108	37	145	- 16
Wednesday.	40	57	37	134	+ 4.4	Wednesday,	42	93	34	127	- 34
Thursday, -	48	47	25	120	- 9.6	Thursday, -	63	123	48	171	+ 10
Friday, -	54	50	39	143	+ 13.4	Friday, -	70	133	42	175	+ 14
Saturday, -	38	46	42	126	- 3.6	Saturday, -	61	108	57	165	+ 4
	314	335	258	907			418	807	320	1,127	

however, that as Dr. Whitelegge's figures refer to the date of appearance of the rash, and, as this appears from the second to the fourth day, a distribution of the cases according to the dates of sickening would tend to level the hills and fill up the hollows to some slight extent, though probably not sufficiently to obliterate the significance of the hollow.

Another line of inquiry suggests itself. Prior to 1874 in Glasgow there was practically no supervision over Scarlet Fever. Patients suffering from mild attacks of Scarlet Fever and contacts must have been moderately numerous amongst the pupils attending school. In this year, however, Dr. Russell began to enforce isolation in all known cases of Scarlet Fever, and, by arrangement with the School Board, such children were not readmitted to attendance without a doctor's certificate of freedom from infection, while contacts were placed under sufficiently stringent rules. In the annexed Table is given the distribution of the deaths at

DEATHS FROM SCARLET FEVER IN GLASGOW AT DIFFERENT AGES  
FOR THE GROUPS OF YEARS 1866-74 AND 1875-82.

	0-1	1-2	2-3	3-4	4-5	5-10	10-15	15-20	20-40	40-60	60
1866-74,	455	862	903	818	693	1,643	283	53	100	7	2
1875-82,	202	459	491	435	392	842	139	44	66	3	1

different ages for the nine years preceding and for the nine years following the date referred to, and it will be seen on examination that in the first period, out of a total of 5,819 deaths, 1,924 occurred between the ages of five and fifteen, and in the latter, out of a total of 3,074 deaths, 1,081 occurred between the same ages, being a proportion of 33·0 per cent. in the first period, against 35·5 per cent. in the second, a difference too slight to have any significance even though it were in the opposite direction. Thus a measure, which practically revolutionised the whole administration of Scarlet Fever in its relation to schools, produced not a particle of effect on the age-incidence of the disease.

In contrast to these sets of figures must be placed those of Sir Shirley Murphy, Medical Officer of Health for the County of London, which are given in the annexed Table,

TABLE SHOWING THE AGES OF NOTIFIED CASES OF SCARLET FEVER IN LONDON FROM 1899 TO 1903 FOR THE WEEKS OF SUMMER HOLIDAY AND THOSE IMMEDIATELY PRECEDING AND FOLLOWING.

Age Periods.	Four Weeks preceding weeks of holiday influence.			Four weeks of holiday influence.			Four Weeks following weeks of holiday influence.		
	0-3.	3-13.	13 and upwards.	0-3.	3-13.	13 and upwards.	0-3.	0-13.	13 and upwards.
1899, -	175	1,051	246	141	793	238	167	1,220	301
1900, -	108	607	202	90	512	182	108	865	263
1901, -	184	1,141	352	169	890	281	193	1,391	382
1902, -	186	1,143	257	203	884	270	180	1,086	234
1903, -	123	810	157	163	612	127	124	789	174
	776	4,752	1,214	766	3,691	1,098	772	5,351	1,354
Ratios between the numbers at each Age-Period and those at the corresponding period in each preceding group.				987	777	904	1'007	1'351	1'233

and which seem to indicate that a certain amount of Scarlet Fever is spread by Schools in London, a difference which seems only to be explained on the ground that Glasgow schools are on the whole hygienically superior to those of London.

NOTE ON THE LEUCOCYTOSIS OF TYPHUS FEVER AS AN AID  
IN DIAGNOSIS. BY ANDREW LOVE, M.D.

On the Leucocytosis of Typhus Fever very little work has been done hitherto, and it is proposed here to deal briefly with the results of an investigation undertaken by me in the City of Glasgow Fever Hospital, Belvidere, during the limited epidemics which occurred in the autumns of 1902 and 1903. Twenty-six cases of Typhus Fever in all were examined, and as the results of these examinations are being published *in extenso* in Part III. in the *Journal of Pathology and Bacteriology* for the present year (1905), only that portion of the work which is of importance in connection with the administration of the hospital, namely, the part dealing with diagnosis, is considered in this note.

Tables showing the condition of the blood are given here for fifteen of the cases examined, of which five died and ten recovered. When the figures given in these Tables are analysed, it is seen that the number of white blood corpuscles is regularly increased in Typhus Fever, and this increase may be observed at the beginning of the fever, though it always becomes marked after the appearance of the rash. Its character is practically uniform, the type of cell which displays the most marked increase being regularly the polymorfo-nuclear variety, though in non-fatal cases the large mono-nuclear variety is sometimes slightly increased in numbers. In cases which prove fatal the eosinophilic cells are uniformly absent, while in those which recover they are always present, though the prognostic value of this sign is somewhat diminished when it is noted that they may not appear till far on in the disease. The red blood corpuscles in Typhus Fever are practically always present in at least the same numbers as in health, while as the disease goes on the numbers tend to increase.

The constant leucocytosis in Typhus Fever thus affords a basis for determining in doubtful cases whether this disease or Enteric Fever be present. If there is a distinct



leucocytosis it must be regarded as Typhus Fever, unless there is present some inflammatory complication, which might tend to raise the otherwise low leucocytosis which characterises Enteric Fever.

The greatest difference is in the behaviour of the polymorpho-nuclear cells, of which, as has been mentioned before, there is a large increase in Typhus Fever, and this difference is so great that a mistake should not arise, even when it is considered that the large mono-nuclear and eosinophilic cells behave in a somewhat similar manner in both diseases.

This fact assumes considerable practical importance when it is remembered that a positive Widal reaction is sometimes obtained in cases of Typhus Fever. The method in which the red blood corpuscles behave is also different in the two fevers, showing a progressive decrease in number in Enteric Fever, while in Typhus the opposite condition is the rule, the number increasing as the disease advances towards the crisis.

Unfortunately there is not a like differentiation to be noted in the blood conditions between Typhus Fever and some other diseases with which it may be confused. In Influenza, which is characterised by an absence of leucocytosis, a blood count may sometimes act as an aid in diagnosis, especially in cases of that disease occurring among persons who have been exposed to the infection of Typhus Fever. With regard to Pneumonia, however, which is often mistaken for Typhus Fever, and *vice versa*, there is so great a similarity between the blood conditions of the two diseases as to make this method of no practical value. Bubonic Plague likewise has a similar blood condition.

When it is considered, however, that the clinical differentiation of Enteric and Typhus Fevers is often a matter of great difficulty, especially among young persons, it will be seen that a real aid in the diagnosis may often be obtained by an examination of the blood.



## FATAL CASES.

CASE No. 1. — F., AET. 30. ADMITTED TO HOSPITAL ON ELEVENTH DAY OF ILLNESS. DIED ON THE THIRTEENTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Number of Leucocytes.
	M.	E.	
12	105·0° F.	103·8° F.	8,000

CASE No. 2. — F., AET.  $1\frac{6}{12}$ . ADMITTED TO HOSPITAL ON FIRST DAY OF ILLNESS. DIED ON THE SEVENTEENTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Total No. of Leucocytes.	
	M.	E.	M.	E.
8	101·6° F.	102·2° F.	...	5,000
9	102·6° F.	101·2° F.	...	...
10	102·0° F.	102·4° F.	2,400	6,700
11	99·8° F.	100·8° F.	3,200	10,600
12	100·0° F.	101·6° F.	3,600	4,000
13	101·8° F.	101·4° F.	3,800	6,600
14	98·6° F.	100·6° F.	12,300	12,000
15	100·4° F.	101·0° F.	8,400	...
17	99·0° F.	101·0° F.	...	12,600

CASE No. 4. — F., AET. 33. ADMITTED TO HOSPITAL ON NINTH DAY OF ILLNESS. DIED ON THE FIFTEENTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thousands).	Polymorpho-nuclear Cells.	Lymphocytes.	Large Mono-nuclear Cells.	Total No. of Leucocytes.	
	M.	E.					M.	E.
9	104·8° F.	105·0° F.	3,335	2,558	322	20	...	2,900
10	104·0° F.	105·0° F.	3,260	...	...	...	7,200	6,600
11	103·8° F.	103·8° F.	4,260	7,052	1,107	41	8,200	5,200
12	103·8° F.	102·6° F.	5,400	3,617	567	216	4,400	7,400
13	103·0° F.	102·6° F.	4,170	3,573	713	114	4,400	5,800
14	102·4° F.	101·6° F.	4,070	4,704	750	146	5,600	6,600
15	98·4° F.	98·6° F.	4,650	7,056	420	924	8,400	...

CASE No. 8. — M., AET. 45. ADMITTED TO HOSPITAL ON NINTH DAY OF ILLNESS. DIED ON THE TENTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thousands).	Polymorpho-nuclear Cells.	Lymphocytes.	Large Mono-nuclear Cells.	Total No. of Leucocytes.	
	M.	E.					M.	E.
10	102·4° F.	101·8° F.	8,300	34,010	1,976	2,014	38,000 (12 N'n)	29,000 (5 P.M.).

CASE No. 9. — F., AET. 15. ADMITTED TO HOSPITAL ON  
FOURTH DAY OF ILLNESS. DIED ON THE EIGHTEENTH DAY  
OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thou- sands).	Poly- morpho- nuclear Cells.	Lympho- cytes.	Large Mono- nuclear Cells.	Total No. of Leucocytes.
	M.	E.					M.
8	104°0' F.	104°6' F.	6,240	8,200	1,400	400	10,000
9	104°2' F.	104°6' F.	...	7,304	1,144	352	8,800
10	104°4' F.	104°6' F.	6,850	11,760	1,680	560	14,000
11	104°4' F.	104°6' F.	...	12,210	2,072	518	14,800
12	104°2' F.	104°4' F.	5,550	11,856	2,580	760	15,200
13	103°4' F.	104°0' F.	...	9,720	1,800	480	12,000
14	104°0' F.	104°4' F.	6,200	9,006	1,938	456	11,400
15	103°6' F.	104°6' F.	...	7,900	1,600	500	10,000
16	105°4' F.	104°4' F.	5,070	11,250	2,700	1,050	15,000
17	100°8' F.	102°2' F.	...	4,860	840	300	6,000
18	104°0' F.	107°2' F.	6,000	36,450	6,300	2,250	45,000

## RECOVERIES.

CASE No. 1.—F., AET. 6. ADMITTED TO HOSPITAL ON  
TWELFTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Leucocytes.
	M.	E.	
13	101°4' F.	103°8' F.	16,000
14	100°6' F.	101°8' F.	10,000

CASE No. 3. — F., AET. 13. ADMITTED TO HOSPITAL ON  
FIFTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thousands).	Poly-morpho-nuclear Cells.	Lympho-cytes.	Large Mono-nuclear Cells.	Eosino-philic Cells.	Total No. of Leucocytes.	
	M.	E.						M.	E.
5	103.8° F.	104.0° F.	3,290	3,200	560	240	...	...	4,000
6	104.0° F.	105.0° F.	3,320	...	...	...	...	4,800	3,400
7	104.2° F.	104.2° F.	6,910	3,040	450	304	...	3,800	3,400
8	104.0° F.	104.8° F.	4,700	...	...	...	...	10,600	12,400
9	104.6° F.	104.6° F.	5,680	7,670	1,717	707	...	10,100	6,400
10	104.2° F.	104.6° F.	5,720	11,390	2,072	1,332	...	14,800	4,200
11	103.6° F.	105.2° F.	6,370	9,794	500	1,416	...	11,800	9,400
12	104.2° F.	105.2° F.	6,040	8,512	1,120	1,508	...	11,200	11,800
13	103.2° F.	104.0° F.	4,600	8,700	1,024	1,276	...	11,600	5,800
14	102.6° F.	103.0° F.	5,330	4,760	1,088	952	...	6,800	23,200
15	100.6° F.	101.4° F.	7,100	...	...	...	...	7,400	6,600
16	98.0° F.	98.0° F.	5,530	4,550	1,400	1,050	...	7,000	7,400
17	97.6° F.	99.0° F.	6,800	...	...	...	...	4,800	6,400
18	97.6° F.	98.0° F.	5,250	3,300	2,442	858	...	6,600	9,800
20	97.2° F.	98.4° F.	7,100	4,428	2,870	902	...	8,200	7,000
22	97.6° F.	99.2° F.	6,900	2,183	1,184	333	...	3,700	4,000
26	98.2° F.	99.0° F.	7,000	2,775	638	278	9	3,700	3,900
42	98.0° F.	98.4° F.	6,100	3,150	968	337	45	4,500	4,700

CASE No. 8. — M., AET.  $\frac{6}{12}$ . ADMITTED TO HOSPITAL ON  
FOURTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thousands).	Poly-morpho-nuclear Cells.	Lympho-cytes.	Large Mono-nuclear Cells.	Eosino-philic Cells.	Total No. of Leucocytes.	
	M.	E.						M.	E.
5	99°0' F.	103°0' F.	...	7,740	7,704	2,556	...	18,000	21,000
6	103°0' F.	104°0' F.	5,890	4,176	7,344	2,880	...	14,400	10,000
7	101°8' F.	103°4' F.	14,575	8,142	3,919	1,739	..	13,800	43,200
8	102°6' F.	101°6' F.	4,300	...	...	...	...	33,400	22,400
9	102°6' F.	102°2' F.	4,630	17,066	9,016	6,118	...	32,000	29,800
10	101°2' F.	102°0' F.	5,230	17,550	6,210	3,240	...	27,000	24,400
11	102°6' F.	101°6' F.	4,100	20,860	6,109	2,831	...	29,800	32,600
12	101°4' F.	99°6' F.	3,600	21,895	5,285	3,020	...	30,200	26,200
13	98°0' F.	98°4' F.	4,000	16,500	6,250	2,250	...	25,000	23,200
14	98°0' F.	99°0' F.	4,000	15,560	8,729	3,225	278	27,800	21,800
15	98°2' F.	98°8' F.	3,000	7,216	7,938	984	262	16,400	30,000
17	98°6' F.	99°0' F.	4,700	...	...	...	...	21,400	22,800
18	98°2' F.	98°6' F.	4,500	10,593	6,831	2,178	198	18,800	18,200
21	98°2' F.	98°8' F.	5,650	14,690	3,277	2,260	113	22,600	25,400
29	98°4' F.	99°0' F.	4,070	7,320	3,721	1,098	61	12,200	14,600

CASE No. 11. — M., AET. 13. ADMITTED TO HOSPITAL  
ON NINTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Poly-morpho-nuclear Cells.	Lympho-cytes.	Large Mono-nuclear Cells.	Eosino-philic Cells.	Total No. of Leu-cocytes.
	M.	E.					
10	103°2 F.	104°0° F.	15,936	2,688	576	...	19,200
11	103°2° F.	103°0° F.	31,504	3,580	716	...	35,800
12	102°6 F.	103°2 F.	12,180	1,540	280	...	14,000
13	102°0° F.	101°8° F.	10,622	2,622	552	...	13,000
14	100°2° F.	100°8° F.	9,960	1,680	300	...	12,000
15	99°8° F.	98°6° F.	...	...	...	...	23,800
16	99°6° F.	99°8° F.	7,802	1,222	282	94	9,400
18	98°8° F.	98°0° F.	17,955	2,520	420	105	21,000
20	98°0° F.	98°8° F.	12,780	4,680	540	...	18,000
23	97°4° F.	98°0° F.	6,256	2,392	552	...	9,200
25	98°0° F.	98°4° F.	4,608	1,600	192	...	6,400

CASE No. 12. — F., AET. 9. ADMITTED TO HOSPITAL  
ON NINTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Poly-morpho-nuclear Cells.	Lympho-cytes.	Large Mono-nuclear Cells.	Eosino-philic Cells.	Total No. of Leucocytes.
	M.	E.					
10	104°0° F.	103°0° F.	10,400	1,820	780	...	13,000
11	102°6° F.	101°8° F.	7,020	1,530	450	...	9,000
12	101°6° F.	102°0° F.	8,200	1,300	500	...	10,000
13	101°8° F.	101°2° F.	10,206	1,890	504	...	12,600
14	99°6° F.	99°4° F.	7,614	1,316	470	...	9,400
15	99°0° F.	98°6° F.	...	...	...	...	9,000
16	98°4° F.	99°6° F.	7,300	2,200	500	...	10,000
18	98°4° F.	99°0° F.	8,940	2,520	480	60	12,000
23	97°4° F.	99°8° F.	5,547	2,580	430	43	8,600

CASE No. 13. — M., AET. 11. ADMITTED TO HOSPITAL  
ON EIGHTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Poly- morpho- nuclear Cells.	Lympho- cytes.	Large Mono- nuclear Cells.	Eosino- philic Cells.	Total No. of Leucocytes.
	M.	E.					
14	100·6° F.	100·2° F.	11,250	3,000	750	.	15,000
15	98·6° F.	100·0° F.	8,322	2,394	570	114	11,400
16	99·8° F.	98·0° F.	6,860	1,862	982	98	9,800
18	97·4° F.	98·4° F.	5,694	1,560	546	...	7,800
21	97·0° F.	98·4° F.	6,300	2,070	540	90	9,000
23	97·4° F.	98·0° F.	7,696	2,288	416	...	10,400
25	97·4° F.	98·0° F.	6,660	2,070	270	...	9,000

CASE No. 14. — F., AET. 6. ADMITTED TO HOSPITAL ON  
SEVENTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Poly- morpho- nuclear Cells.	Lympho- cytes	Large Mono- nuclear Cells.	Eosino- philic Cells.	Total No of Leucocytes.
	M.	E.					
13	101·0° F.	102·2° F.	6,532	1,932	736	...	9,200
14	99·4° F.	98·4° F.	8,280	2,880	720	120	12,000
15	98·0° F.	98·0° F.	7,686	3,654	1,134	126	12,600
17	97·0° F.	98·4° F.	5,300	4,100	500	100	10,000
20	97·6° F.	98·6° F.	4,300	3,870	387	43	8,600
22	97·6° F.	98·4° F.	4,620	3,696	440	44	8,800



CASE No. 15.—M., AET. 4. ADMITTED TO HOSPITAL ON FIFTH  
DAY OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thous- ands).	Poly- morpho- nuclear Cells.	Lympho- cytes.	Large Mono- nuclear Cells.	Eosino- phic Cells.	Total No. of Leucocytes.	
	M.	E.						M.	E.
6	102.2° F.	102.8° F.	4,310	5,600	3,200	1,200	..	10,000	...
7	103.0° F.	103.2° F.	5,000	6,298	2,444	658	..	9,400	9,000
8	102.4° F.	103.4° F.	4,460	7,920	3,360	720	..	12,000	11,200
9	101.4° F.	102.4° F.	4,580	9,100	4,340	500	..	14,000	14,000
10	102.0° F.	102.0° F.	4,550	10,360	3,220	420	..	14,000	13,000
11	100.4° F.	102.0° F.	4,070	7,410	3,591	399	..	11,400	15,000
12	99.2° F.	103.0° F.	5,280	11,040	4,480	480	..	10,400	18,000
13	100.4° F.	102.6° F.	4,840	7,150	3,520	330	..	11,000	13,000
14	101.4° F.	101.6° F.	4,950	7,770	5,320	840	70	14,000	8,400
16	99.0° F.	101.8° F.	4,750	7,800	4,420	650	130	13,000	8,800
18	98.0° F.	100.2° F.	5,000	5,888	6,336	512	...	12,800	9,200
20	98.0° F.	97.2° F.	4,750	5,104	5,800	696	...	11,600	10,000
22	98.0° F.	98.0° F.	4,900	4,590	5,202	408	...	10,200	9,000
26	98.0° F.	98.4° F.	4,500	5,148	3,080	528	...	8,800	8,500

CASE No. 16.—F., AET. 28.—ADMITTED TO HOSPITAL ON  
NINTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thousands).	Poly-morpho-nuclear Cells.	Lympho-cytes.	Large Mono-nuclear Cells.	Eosino-philic Cells.	Total No. of Leucocytes.	
	M.	E.						M.	E.
9	103·8° F.	104·0° F.	6,600	...	...	...	...	15,200	24,000
10	102·8° F.	104·4° F.	8,000	16,160	2,525	1,515	...	20,200	22,000
11	101·4° F.	104·0° F.	8,350	10,032	798	570	...	11,400	12,800
12	101·0° F.	102·4° F.	7,500	16,072	1,568	1,960	...	19,600	20,800
13	101·8° F.	103·0° F.	8,000	15,400	3,300	3,300	...	22,000	...
15	100·4° F.	101·6° F.	8,150	18,240	2,160	3,600	...	24,000	17,200
16	100·2° F.	101·0° F.	8,880	11,972	1,968	2,460	...	16,400	17,000
17	100·2° F.	99·2° F.	7,700	12,300	1,804	2,296	...	16,400	15,000
18	99·2° F.	100·6° F.	6,770	11,060	2,240	700	...	14,000	14,500
19	99·2° F.	100·4° F.	6,800	12,792	1,716	1,092	...	15,600	11,200
21	98·4° F.	98·6° F.	6,000	5,800	1,560	640	...	8,000	4,000
23	97·4° F.	99·0° F.	5,850	5,950	1,912	595	43	8,500	8,000
25	98·0° F.	98·0° F.	5,500	5,125	2,050	984	45	8,200	8,000

CASE No. 17. — F., AET. 21. ADMITTED TO HOSPITAL ON  
TWELFTH DAY OF ILLNESS.

Day of Illness.	Temperatures.		Red Cells (in Thousands).	Poly. morpho-nuclear Cells.	Lympho-cytes.	Large Mono-nuclear Cells.	Eosino-philic Cells.	Total No. of Leucocytes.	
	M.	E.						M.	E.
13	102·2° F.	103·4° F.	5,340	12,168	2,964	468	...	15,600	27,000
14	101·8° F.	103·6° F.	7,200	9,690	1,140	456	114	11,400	12,000
15	99·4° F.	100·8° F.	5,990	12,160	2,960	880	...	16,000	12,600
16	98·4° F.	98·0° F.	5,250	8,400	3,000	480	120	12,000	10,800
18	97·6° F.	98·0° F.	5,000	5,040	2,923	336	101	8,400	8,600
20	98·0° F.	98·4° F.	5,500	7,320	4,200	480	...	9,200	10,000
23	97·0° F.	99·0° F.	5,030	...	...	...	...	12,000	10,000
25	98·0° F.	98·2° F.	4,900	6,290	1,785	340	85	8,500	7,000

# STATISTICAL TABLES.

## TABLE I.

### GENERAL STATEMENT.

REMAINING in Hospital, 1st June, 1903.	-	302
ADMITTED during 1903-1904.	-	3,256
		<hr/>
		3,558
DISMISSED—		
Cured, Relieved, and Died,	-	3,240
REMAINING in Hospital, 31st May, 1904,	-	318
Total Number of Deaths,	296	
Gross Mortality,	-	9·1 per cent.
DAILY average number of patients in Hospital,	-	342
Average period of stay in Hospital,	-	36·6 days.

TABLE II.

TABLE SHOWING THE MONTHLY DISTRIBUTION OF THE PRINCIPAL DISEASES DURING THE YEAR 1903-1904.

	Scarlet Fever.		Diphtheria.		Enteric Fever.		Typhus Fever.		Measles.		Whooping-cough.		Erysipelas.		Total Admissions to Hospital.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1903.																
June, - - -	82	5	12	2	30	3	...	...	34	1	21	2	3	1	193	17
July, - - -	63	4	13	1	26	9	1	1	53	3	11	2	1	...	189	25
August, - - -	67	2	15	1	63	10	9	1	50	2	16	2	1	...	239	22
September, - - -	95	3	11	2	48	3	...	...	56	3	7	2	4	...	244	18
October, - - -	45	2	19	1	44	5	3	...	108	9	5	1	1	...	241	23
November, - - -	34	2	30	7	37	10	1	...	163	10	8	1	2	...	296	32
December, - - -	6	...	4	...	7	...	...	...	154	20	4	1	2	...	184	26
1904.																
January, - - -	...	...	2	1	...	...	...	...	5	...	...	...	...	...	11	2
February, - - -	21	1	6	...	2	...	1	...	10	2	...	...	5	...	57	5
March, - - -	36	...	11	2	24	3	...	...	44	...	1	1	3	...	143	11
April, - - -	45	3	14	1	14	3	1	...	28	2	6	1	...	...	137	20
May, - - -	31	2	17	4	10	2	1	...	25	...	33	3	2	...	142	16
Totals, - - -	525	24	154	22	305	48	17	2	730	52	112	16	24	1	2,076	217

TABLE III.  
ENTERIC FEVER.

Age-Periods.	MALES.		FEMALES.		TOTAL.		Mortality per cent
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
0—5	9	1	6	...	15	1	6·6
5—10	30	1	31	3	61	4	6·5
10—15	23	2	32	2	55	4	7·2
15—20	18	5	22	3	40	8	20·0
20—25	24	9	18	3	42	12	28·5
25—30	23	0	17	3	40	0	22·5
30—35	7	2	9	1	16	3	18·7
35—40	7	2	8	1	15	3	20·0
40—45	7	2	6	...	13	2	15·3
45—50	4	1	1	...	5	1	20·0
50—55	...	...	1	...	1	...	...
55—60	1	1	...	...	1	1	100·0
60—65	1	...	...	...	1	...	.
Totals,	154	32	151	16	305	48	15·7

Two patients died within 24 hours of admission.

TABLE IV.  
TYPHUS FEVER.

Age-Periods.	MALES.		FEMALES.		TOTAL.		Mortality per cent.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
0—5	2	...	...	...	2	...	...
5—10	...	...	1	...	1	...	...
10—15	...	...	...	...	...	...	...
15—20	1	...	3	...	4	...	...
20—25	...	...	3	1	3	1	33'3
25—30	...	...	1	...	1	...	...
30—35	...	...	...	...	...	...	...
35—40	1	...	...	...	1	...	...
40—45	...	...	2	...	2	...	...
45—50	1	1	...	...	1	1	100'0
50—55	1	...	...	...	1	...	...
55—60	1	...	...	...	1	...	...
Totals,	7	1	10	1	17	2	11'7



TABLE V.  
DIPHTHERIA.

Age-Periods.	TOTAL CASES.				FAUCIAL CASES.			
	Males.		Females.		Males.		Females.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
0— 1	8	4	2	1	4	1	...	...
1— 2	13	1	9	5	3	1	3	1
2— 3	17	1	12	2	8	...	4	1*
3— 4	9	1	8	1	4	1	4	1
4— 5	4	1	11	1	3	1	9	1
5—10	17	...	24	3	14	...	19	2
10—15	3	...	2	1	3	...	2	1
15—20	1	...	3	...	1	...	3	...
20—30	2	...	4	...	2	...	4	...
30—40	2	...	2	...	2	...	2	...
50—60	1	...	...	...	1	...	...	...
Totals, - -	77	8	77	14	45	4	50	7
Mortality percent.	10·3		18·1		8·8		14·0	

Age-Periods.	LARYNGEAL CASES.				TRACHEOTOMIES.			
	Males.		Females.		Males.		Females.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
0— 1	4	3	2	1	4	3	...	...
1— 2	10	...	6	4	6	...	5	4†
2— 3	9	1	8	1	4	1	3	1
3— 4	5	...	4	...	1	...	3	...
4— 5	1	...	2	...	...	...	...	...
5—10	3	...	5	1	1	...	2	1
10—15	...	...	...	...	...	...	...	...
15—20	...	...	...	...	...	...	...	...
20—30	...	...	...	...	...	...	...	...
30—40	...	...	...	...	...	...	...	...
50—60	...	...	...	...	...	...	...	...
Totals, - -	32	4	27	7	16	4	13	6
Mortality percent.	12·5		25·9		25·0		46·1	

\* Haemorrhagic Diphtheria.

† One death from Measles.

Five patients died within 24 hours of admission.

TABLE VI.  
SCARLET FEVER.

Age-Periods.	MALES.		FEMALES.		TOTALS.		Mortality per cent.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
0—1	4	...	2	...	6	...	...
1—2	6	...	6	1	12	1	8·3
2—3	13	1	13	2	26	3	11·5
3—4	24	3	29	...	53	3	5·6
4—5	27	2	41	2	68	4	5·8
5—6	28	1	28	2	56	3	5·3
6—7	25	...	37	...	62	...	...
7—8	22	...	23	...	45	...	...
8—9	16	...	24	2	40	2	5·0
9—10	8	...	9	1	17	1	5·8
10—15	30	...	42	2	72	2	2·7
15—20	12	1	16	...	28	1	3·5
20—25	9	...	8	2	17	2	11·6
25—30	6	1	10	1	16	2	12·5
30—35	4	...	2	...	6	...	...
35—40	...	...	1	...	1	...	...
Totals,	234	9	291	15	525	24	4·5

One patient died within 24 hours of admission.

TABLE VII.

## MEASLES.

Age-Periods.	MALES.		FEMALES.		TOTALS.		Mortality per cent.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
0—1	9	4	14	1	23	5	21.7
1—2	59	11	44	10	103	21	20.3
2—3	46	5	58	5	104	10	9.6
3—4	54	2	47	4	101	6	5.9
4—5	44	3	56	1	100	4	4.0
5—6	47	2	43	1	90	3	3.3
6—7	41	1	42	...	83	1	1.2
7—8	27	...	25	1	52	1	1.9
8—9	9	1	10	...	25	1	4.0
9—10	6	...	4	...	10	...	...
10—15	5	...	4	...	9	...	...
15—20	3	...	3	...	6	...	...
20—25	9	...	8	...	17	...	...
25—30	2	...	1	...	3	...	...
30—35	...	...	1	...	1	...	...
35—40	...	...	2	...	2	...	...
40—45	...	...	1	...	1	...	...
Totals,	361	29	369	23	730	52	7.1

Three patients died within 24 hours of admission.

**TABLE VIII.**  
**WHOOPIING-COUGH.**

Age-Periods.	MALES.		FEMALES.		TOTAL.		Mortality per cent.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
0—1	5	1	10	4	15	5	33·5
1—2	7	2	11	3	18	5	27·7
2—3	10	3	9	1	19	4	21·0
3—4	9	...	6	...	15	...	...
4—5	8	1	8	...	16	1	6·2
5—6	6	...	3	...	9	...	...
6—7	4	1	6	...	10	1	10·0
7—8	1	...	3	...	4	...	...
8—9	2	...	1	...	3	...	...
9—10	1	...	...	...	1	...	...
10—15	1	...	1	...	2	...	...
Totals,	54	8	58	8	112	16	14·3

One patient died within 24 hours of admission.

TABLE IX.  
ERYSIPELAS AND PUERPERAL FEVER.

Age-Periods.	ERYSIPELAS.				PUERPERAL FEVER.	
	Males.		Females.		Cases.	Deaths.
	Cases.	Deaths.	Cases.	Deaths.		
0—5	1	...	...	...	...	...
5—10	...	...	...	...	...	...
10—15	1	...	...	...	...	...
15—20	1	...	3	...	...	...
20—25	1	...	1	...	13	7
25—30	3	...	2	...	11	9
30—35	...	...	4	...	10	5
35—40	...	...	1	...	5	3
40—45	2	1	2	...	...	...
45—50	...	...	...	...	1	...
50—55	1	...	1	...	...	...
Totals, -	10	1	14	...	40	24

Two patients died within 24 hours of admission.

TABLE X.  
UNCLASSIFIED DISEASES.  
(a) INFECTIOUS.

	MALES.		FEMALES.	
	Cases.	Deaths.	Cases.	Deaths.
Influenza, - - -	...	...	2	1
Febricula, - - -	2	...	...	...
Tuberculosis—				
(a) Meningitis, - - -	2	2	1	1
(b) Peritonitis, - - -	1	...	...	...
(c) Of Lungs, - - -	...	...	1	1
(d) Other Tubercular Diseases,	...	...	1	...
Syphilis, - - -	2	...	...	...
German Measles, - - -	5	...	5	...
Varicella, - - -	2	...	1	...
Parotitis, - - -	1	...	1	...
Anthrax, - - -	1	...	2	...
Beri-beri, - - -	8	...	...	...
Vaccinal Fever, - - -	1	...	...	...
Pyæmia, - - -	2	2	1	1
Totals, - - -	27	4	15	4



TABLE X.—*Continued.*  
UNCLASSIFIED DISEASES.  
(b) NON-INFECTIOUS.

	MALES.		FEMALES.	
	Cases.	Deaths.	Cases.	Deaths.
Pneumonia, - - - -	7	1	4	...
Broncho-pneumonia, - - -	7	6	3	1
Bronchitis, - - - -	3	...	...	...
Pleurisy, - - - -	...	...	1	1
Gangrene of Lungs,	1	1	...	...
Empyema, - - - -	1	...	...	...
Laryngitis, - - - -	...	...	4	1
Stomatitis, - - - -	3	...	2	...
Tonsillitis, - - - -	10	...	17	...
Gastric Catarrh,	2	...	4	...
Cirrhosis of Liver,	1	...	...	...
Nephritis, - - - -	...	...	2	1
Meningitis, - - - -	1	1	4	3
Hemiplegia,	1	1	1	...
Rheumatism, - - - -	...	...	3	...
Septic Conditions, - - -	2	...	1	...
Carcinoma, - - - -	...	...	1	...
Bubonic Conditions resembling Plague, - - - -	2	...	...	...
Otitis Media, - - - -	1	...	...	...
Cancrum Oris, - - - -	...	...	2	2
Erythemata, - - - -	...	...	4	...
Housemaid's Knee, - - -	1	...	...	...
Conjunctivitis, - - - -	1	...	3	...
Alcoholism, - - - -	1	...	...	...
Premature Birth,- - - -	1	1	...	...
Nil, - - - -	12	...	8	...
Nursing Mothers, - - -	...	...	5	...
Total, - - - -	68	11	69	9

Twelve cases died within 24 hours of admission.

TABLE XI.

NUMBER OF PATIENTS ADMITTED SUFFERING FROM  
TWO DISEASES.

Measles and Chickenpox, - - - - -	3
Diphtheria and Scarlet Fever, - - - - -	1

TABLE XII.

NUMBER OF PATIENTS ADMITTED INCUBATING A DISEASE  
DIFFERENT FROM THAT FOR WHICH THEY WERE ADMITTED.

Disease for which admitted.	DISEASES WHICH DEVELOPED.					
	Measles.	Whooping- cough.	Chicken- pox.	Röthlen.	Smallpox.	Scarlet Fever.
Scarlatina, -	...	...	...	I	...	...
Diphtheria, -	...	I	I	...	...	I
Whooping-cough,	2	...	...	...	...	...
Measles, - -	...	4	...	...	...	...
Chickenpox, -	I	...	...	...	...	...
Smallpox, - -	I	...	...	...	...	...
Nil, - - -	I	...	...	...	4	...

TABLE XIII.

NUMBER OF PATIENTS INFECTED WITH DISEASES OTHER THAN  
THAT PRESENT ON ADMISSION TO HOSPITAL.

Disease for which admitted.	DISEASE ACQUIRED.						
	Scarlet Fever.	Measles	Chicken- pox.	Mumps.	Röthlen	Erysipe- las.	Diph- theria.
Scarlatina, -	...	3	...	1	...	1	1
Measles, - -	2	...	1	...	1	...	...
Whooping-cough,	...	21	...	...	...	...	...
Diphtheria, -	2	5	...	...	...	...	...
Chickenpox, -	1	...	...	...	...	...	...
Smallpox, - -	...	...	3	...	...	...	..
Nil, - - -	...	...	2	...	...	...	...

TABLE XIV.

INFECTIOUS DISEASES AMONG THE STAFF.

	Scarlet Fever.	Typhoid Fever.	Measles.	Röthlen.	Mumps.	Small- pox.	Diph- theria.
Doctors, - -	...	...	...	...	...	...	2
Nurses, - - -	4	3	1	1	1	...	1
Cleaners, - -	2	...	...	...	...	2	...
Ambulance Drivers.	...	...	1	...	...	1	...



## APPENDICES.

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## APPENDIX A.

REPORT BY THE VISITING PHYSICIAN  
OF THE  
CITY OF GLASGOW SMALLPOX HOSPITAL  
FOR THE  
*Year ending 31st May, 1904.*

On the 1st of June, 1903, there were in the Hospital 21 cases of Chickenpox. In addition, 1,181 cases were admitted during the year. This total consisted of—

Smallpox,	-	-	-	-	-	-	-	1,000
Chickenpox,	-	-	-	-	-	-	-	99
Chickenpox and Measles,					-	-	-	6
Chickenpox and Scabies,					-	-	-	1
Chickenpox and Scarlet Fever,					-	-	-	1
Chickenpox and Syphilis,	-	-	-	-	-	-	-	1
Chickenpox and Whooping-cough,					-	-	-	1
Chickenpox and Marasmus,					-	-	-	1
Chickenpox and Osteomyelitis,					-	-	-	1
Measles,	-	-	-	-	-	-	-	4
Scarlet Fever,	-	-	-	-	-	-	-	1
Septicæmia,					-	-	-	1
Syphilis,	-	-	-	-	-	-	-	5
Pneumonia,	-	-	-	-	-	-	-	1
Febricula,	-	-	-	-	-	-	-	6
Tonsillitis,	-	-			-	-	-	3
Gastritis,	-	-	-	-	-	-	-	1
Rheumatism,	-	-	-	-	-	-	-	1
Various skin diseases, including— Acne, Lichen.								
Scabies, Urticaria,					-	-	-	18
Nursing Mothers,	-	-	-	-	-	-	-	8
Babies with Mothers (not Smallpox).					-	-	-	17*
Nil,	-	-	-	-	-	-	-	4
Total,	-	-	-	-	-	-	-	1,181

\* Three developed Chickenpox.



Among the total admitted there were 79 deaths, giving a death-rate of 6·68 per cent. of all cases treated during the year.

*Smallpox.*—The first case of Smallpox for the year was admitted on September 21st, 1903, this patient having contracted the disease at the Talla Water-works.

Of the cases (1,000), 96 were unvaccinated, of whom 73 recovered and 23 died, giving a mortality of 23·9 per cent.

It is of interest to note that almost 50 per cent. of the unvaccinated cases (*viz.*, 47 out of 96 cases) were children under 5 years of age, and that the death-rate in this class was 34 per cent. (there being 16 deaths).

In 32 per cent. of the unvaccinated cases (*viz.*, in 31 cases out of 96) the attack was a confluent one. In 46 per cent. of the cases (in 45 out of 96) the attack was abundant. No hæmorrhagic cases occurred in unvaccinated cases; thus 32 per cent. of the unvaccinated cases were of a very severe type.

In 37 cases admitted during the year vaccination was "doubtful"—that is to say, vaccination was alleged to have been performed in infancy, but of this there was no evidence on admission.

Of these, 16 were confluent and 5 hæmorrhagic—that is, 56 per cent. were of a very serious nature, while 13 died, giving a case mortality in this class of 35·13 per cent.

Among the 867 vaccinated cases, 38 deaths occurred, a mortality of 4·38 per cent. No deaths occurred in vaccinated cases under 20 years of age.

Of 104 cases between 20 and 25 years of age, 1 death occurred, a mortality of ·95 per cent. Above the age of 25 years we find that among 681 patients 37 deaths occurred, giving a case mortality of 5·4 per cent.

Of all the vaccinated cases, 130 were confluent and 9 were hæmorrhagic—that is, 16 per cent. were of a very severe type, as compared with 56 per cent. and 32 per cent. among the doubtful and unvaccinated cases.

*Chickenpox.*—There were admitted during the year 99 cases of uncomplicated Chickenpox, two of whom developed Meningitis and died. There was one case of Chickenpox and Marasmus and one case of Chickenpox and Osteomyelitis, both of whom died. There were also six cases of Chickenpox and Measles, one case of Chickenpox and Scarlet Fever, and one case of Chickenpox and Whooping-cough, all of whom were dismissed well.

*Errors in Diagnosis.*—In addition, there were sent into Hospital as cases of Smallpox or Chickenpox 39 patients who were found not to have these diseases. Of these, 17 were cases of various febrile diseases, including Measles, Syphilis, Septicæmia, Febricula, and Pneumonia.

Eighteen were cases of skin disease, whose eruption more or less closely resembled that of Smallpox, including Acne, Lichen, Scabies, and Urticaria.

The remaining four cases showed no discoverable diseases.

All these 39 cases were dismissed well.

In addition, eight mothers, not affected with Smallpox or Chickenpox, were admitted to nurse their infants, who suffered from these diseases.

These eight were dismissed well.

Finally, 17 infants, not suffering from Smallpox, were admitted along with their mothers, who had the disease. Three of these developed Chickenpox in the wards. All were dismissed well.

*Demonstrations to Students.*—During the year demonstrations of the cases were frequently given by myself, and were extensively taken advantage of by students.

R. S. THOMSON,  
*Visiting Physician.*

TABLE I.—CITY OF GLASGOW SMALLPOX HOSPITAL, BELVIDERE.—  
CASES TREATED FROM 1ST JUNE, 1903, TO 31ST MAY, 1904,  
CLASSIFIED AS TO VACCINATION.

AGE-PERIODS.	VACCINATED.		VACCINATION DOUBTFUL.		UNVACCINATED.		TOTAL.	
	Cases.	Deaths.	Cases.	Deaths	Cases.	Deaths	Cases.	Deaths.
0—5, - -	1	...	4	1	47	16	52	17
5—10, - -	12	...	7	...	16	2	35	2
10—15, - -	23	...	1	1	3	1	27	2
15—20, - -	46	...	2	...	5	...	53	...
20—25, - -	104	1	1	1	11	1	116	3
25—30, - -	139	3	4	...	1	...	144	3
30—35, - -	168	6	2	1	1	...	171	7
35—45, - -	243	13	9	7	6	2	258	22
45—55, - -	97	11	6	2	5	1	108	14
55—65, - -	23	2	1	...	...	...	24	2
65 and over, -	11	2	...	...	1	...	12	2
	867	38	37	13	96	23	1,000	74

TABLE II.—CITY OF GLASGOW SMALLPOX HOSPITAL, BELVIDERE.—  
1904, CLASSIFIED AS TO AGE, CHARACTER,

AGE- PERIODS.	AREA.	ONE MARK.								Two			
		FOVEATED.				NOT FOVEATED.				FOVEATED.			
		S.	A.	C.	H.	S.	A.	C.	H.	S.	A.	C.	H.
0—5	- - - -	One patient				with 1 mark				31 sq. in., not			
5—10	Sq. In.												
	- '25 { Cases,	...	2	...	...	2	...	...	...	...	...	...	...
	- '25 { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	'25—'5 { Cases,	2	...	...	...	2	I	I	...	...	...	...	...
	'25—'5 { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
10—15	'5—1' { Cases,	...	...	...	...	...	...	...	...	...	...	...	...
	'5—1' { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	1' and over { Cases,	...	...	...	...	...	...	...	...	...	...	...	...
	1' and over { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	Total, { Cases,	2	2	...	...	4	I	I	...	...	...	...	...
15—20	Total, { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	- '25 { Cases,	4	...	...	...	I	I	...	...	...	...	...	...
	- '25 { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	'25—'5 { Cases,	I	...	...	...	5	I	...	...	...	...	...	...
	'25—'5 { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
20—25	'5—1' { Cases,	I	I	...	...	I	...	...	...	I	...	...	...
	'5—1' { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	1' and over { Cases,	...	...	...	...	...	...	...	...	...	...	...	...
	1' and over { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	Total, { Cases,	6	I	...	...	7	2	...	...	I	...	...	...
20—25	Total, { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	- '25 { Cases,	I	...	...	...	4	I	I	...	...	...	...	...
	- '25 { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	'25—'5 { Cases,	5	...	...	...	2	I	I	...	...	I	...	...
	'25—'5 { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
20—25	'5—1' { Cases,	5	...	...	...	I	I	I	...	I	...	...	...
	'5—1' { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	1' and over { Cases,	...	...	...	...	I	...	I	...	I	...	...	...
	1' and over { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	Total, { Cases,	11	...	...	...	8	3	4	...	2	I	...	...
20—25	Total, { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	- '25 { Cases,	I	...	...	...	3	...	2	...	...	...	...	...
	- '25 { Deaths,	...	...	...	...	...	...	I	...	...	...	...	...
	'25—'5 { Cases,	4	2	...	...	7	I	...	...	I	...	...	...
	'25—'5 { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
20—25	'5—1' { Cases,	4	2	...	...	6	...	...	...	6	2	I	...
	'5—1' { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	1' and over { Cases,	2	I	...	...	2	3	...	...	9	2	...	...
	1' and over { Deaths,	...	...	...	...	...	...	...	...	...	...	...	...
	Total, { Cases,	11	5	...	...	18	4	2	...	16	4	I	...
	Total, { Deaths,	...	...	...	...	...	...	I	...	...	...	...	...







—continued.

MARKS.				THREE MARKS.								FOUR MARKS AND OVER.								
NOT FOVEATED.				FOVEATED.				NOT FOVEATED.				FOVEATED.				NOT FOVEATED.				
S.	A.	C.	H.	S.	A.	C.	H.	S.	A.	C.	H.	S.	A.	C.	H.	S.	A.	C.	H.	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
2	1	3	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
5	5	1	...	1	...	...	1	2	...	...	...	...	...	1	...	2	...	...	...	
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
5	5	...	...	4	2	...	...	2	...	...	...	1	1	1	...	1	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12	11	4	...	6	2	...	1	5	...	...	...	1	1	2	...	3	...	...	139 3	
...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...		...
2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
8	6	2	...	1	1	...	...	...	1	...	...	1	1	...	...	1	...	1	...	
1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
7	4	2	...	...	1	1	...	3	2	...	...	1	...	...	...	...	...	...	...	
...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
18	10	6	...	2	2	1	...	3	4	...	...	2	1	...	...	1	...	1	...	168 6
1	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
3	2	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
5	2	3	...	...	1	...	...	...	...	1	...	...	...	...	...	2	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
2	5	4	1	3	...	...	...	3	1	...	...	1	1	...	...	...	1	...	...	
...	*1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
2	5	2	...	...	1	...	...	1	2	...	...	1	...	...	...	1	...	1	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12	14	10	1	3	2	...	1	5	3	1	...	3	1	...	...	3	1	1	...	243 13
...	*1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
...	1	3	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
2	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
2	...	1	...	1	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	1	...	...	1	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
4	3	5	...	3	1	...	...	4	1	1	...	...	...	1	...	...	1	...	...	97 11
...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

\* Death from Strangulated Hernia.

TABLE II.

AGE- PERIODS.	AREA.	ONE MARK.								Two			
		FOVEATED.				NOT FOVEATED.				FOVEATED.			
		S.	A.	C.	H.	S.	A.	C.	H.	S.	A.	C.	H.
55—65	Sq. In.												
	— '25	{ Cases,	...	...	...	...	2	I	...	...	...	...	...
		{ Deaths,	...	...	...	...	...	...	...	...	...	...	...
	'25—'5	{ Cases,	I	...	...	...	3	...	...	...	...	...	...
		{ Deaths,	...	...	...	...	I	...	...	...	...	...	...
	'5—1'	{ Cases,	...	I	...	...	I	...	...	I	...	...	...
		{ Deaths,	...	I	...	...	...	...	...	...	...	...	...
	1' and over	{ Cases,	...	...	...	...	I	I	...	...	...	...	...
		{ Deaths,	...	...	...	...	...	...	...	...	...	...	...
	Total,	{ Cases,	I	I	...	...	7	2	...	I	...	...	...
		{ Deaths,	...	I	...	...	I	...	...	...	...	...	...
65 and upwards	— '25	{ Cases,	...	...	...	2	2	...	...	...	...	...	...
		{ Deaths,	...	...	...	...	I	...	...	...	...	...	...
	'25—'5	{ Cases,	...	...	...	...	...	I	...	I	...	I	...
		{ Deaths,	...	...	...	...	...	I	...	...	...	...	...
	'5—1'	{ Cases,	...	...	...	...	...	...	...	...	...	...	...
		{ Deaths,	...	...	...	...	...	...	...	...	...	...	...
	1' and over	{ Cases,	...	...	...	...	...	...	...	I	...	...	...
		{ Deaths,	...	...	...	...	...	...	...	...	...	...	...
	Total,	{ Cases,	...	...	...	2	2	I	...	2	...	I	...
		{ Deaths,	...	...	...	...	I	I	...	...	...	...	...



TABLE III.—CITY OF GLASGOW SMALLPOX HOSPITAL, BELVIDERE.—UNVACCINATED AND DOUBTFULLY VACCINATED CASES TREATED FROM 1ST JUNE, 1903, TO 31ST MAY, 1904, CLASSIFIED AS TO AGE AND CHARACTER OF ATTACK; WITH RESULTS.

AGE-PERIODS.	UNVACCINATED.										AGE-PERIODS.	DOUBTFULLY VACCINATED.									
	Sparse.		Abundant.		Confluent.		Hæmorrhagic.		Total.			Sparse.		Abundant.		Confluent.		Hæmorrhagic.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
0—5, -	8	1	29	8	10	7	...	47	16	...	...	2	...	1	...	...	...	...	4	1	
5—10, -	5	...	6	...	5	2	...	16	2	...	...	2	...	...	3	...	...	...	7	...	
10—15, -	...	...	2	...	...	1	1	...	3	1	...	...	1	1	...	...	...	...	1	1	
15—20, -	1	...	2	...	2	...	...	5	...	...	...	1	...	...	1	...	...	...	2	...	
20—25, -	...	...	3	...	...	8	1	11	1	...	...	...	...	...	1	1	...	...	1	1	
25—30, -	...	...	1	...	...	...	...	1	...	...	...	...	2	...	2	...	...	...	4	...	
30—35, -	...	...	1	...	...	...	...	1	...	...	...	1	...	...	1	1	...	...	2	1	
35—45, -	1	...	1	...	4	2	...	6	2	...	...	...	...	5	3	4	4	9	7	...	
45—55, -	2	...	2	...	1	1	...	5	1	...	...	1	...	3	1	1	1	6	2	...	
55—65, -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
65 and over, -	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
	18	1	45	8	31	14	...	96	23	...	...	7	...	9	2	16	6	5	5	37	13



## APPENDIX B.

The following is a list of the donors of toys, books, money, &c., for the patients in the hospital at Christmas and New-Year, 1903-4.

Mrs. Calder, 93 Scott's Land, Stane, Shotts.  
 Misses MacEwan, 13 Huntly Gardens.  
 Miss Jane MacLellan, Ardmay, 1 Eglinton Drive, Kelvinside, N.  
 S. I. Inrie, Esq., 41 Garthland Drive.  
 Mrs. Douglas Ross, 266 St. Vincent Street.  
 Messrs. D. Mackintosh & Co., 49 Jamaica Street.  
 Mrs. Laing, 26 Millbrae Crescent, Langside.  
 T. W. Stevenson, Esq., 20 Queen Square, Strathbungo.  
 F. Waterston, Esq., St. Brinnans, Baillieston.  
 Mrs. Wm. Tulloch, 52 Montgomery Drive, Kelvinside.  
 Mrs. Hamilton, 1 North Park Terrace, Hillhead.  
 Miss Margt. Speir, Newton Farm, Newton.  
 Miss Hamilton, 11 Queen's Square.  
 Miss Waddell, Inverreck, Kilmaleolm.  
 Mrs. A. G. Brown, 18 Royal Terrace, W.  
 Mrs. John M. Jopp, Ellora, Bearsden.  
 Robert Lumsden, Esq., 20 Finlay Drive.  
 Mrs. Henry Dallachy, 145 Greenhead Terrace.  
 Mrs. T. Potter, Jun., Buchanan Drive, Cambuslang.  
 J. Neil, Esq., 316 St. Vincent Street.  
 Mrs. Lawrie, 48 Prince's Square.  
 Mrs. Tarbet, 44 Dumbarton Road.  
 Miss Innes, 8 Bruce Road, Pollokshields.  
 Miss Grant, c/o MacCallum & Sons, Helensburgh.  
 Mrs. L. MacBrayne, 11 Park Circus Place.  
 Mrs. J. Hay Wilson, 6 Park Circus Place.  
 Mrs. Thomas A. Mathieson, 6 Park Circus Place.  
 Claremont Street U.F. Church, per the Rev. Adam C. Welch, B.D.  
 Messrs. James Herbertson & Sons, 85 Bedford Street.  
 Mrs. Wotherspoon, 9 Park Circus.  
 Dugald MacKechnie, Esq., 16 Candleriggs.  
 Baillie James Steele, City Chambers.  
 Messrs. Joseph Johnstone & Boath, 53 Bothwell Street.  
 Whitevale U.F. Church, Gallowgate.  
 Dalmarnock Road E.U. Congregational Church, per the Rev. J. Mathieson Forson.  
 Wellpark U.F. Church, per the Rev. H. Mair, 38 Circus Drive.  
 "Blythswood Busy Bees," per M. Home Morton, Esq., 11 Jane Street.  
 St. Margaret's Church, Tollcross, per Rev. Mr. Liddle.  
 Victoria Place Baptist Church, per Rev. John MacLean, Butterbiggin's Rd.  
 Victoria U.F. Church Sabbath School, per Wm. W. Livingston, Esq., 142 Main Street, Tollcross.  
 Mrs. Findlay, 5 Bute Gardens, Hillhead.  
 Mrs. Ure, Cairndhu, Helensburgh.  
 Sydney Place U.F. Sabbath School, per John Inglis, Esq., 710 Gallowgate.  
 The Hon. Misses Burns, Wemyss House, Wemyss Bay—a Basket of Flowers weekly during season.  
 Miss Stephen, Kelly, Wemyss Bay—a Box of Flowers weekly during season.  
 Proprietors of the *Glasgow Weekly Herald*—6 Copies of the *Weekly Herald* every week.

In addition there were several anonymous donors.